

Claims

WHAT IS CLAIMED IS:

1. A method comprising:
 - recording action information pertaining to an action of a first computer-related source and an associated relationship with a recorded action of a second computer-related source;
 - executing an action management operation on the action of the first computer-related source and the recorded action of the second computer-related source.
2. The method of claim 1 further comprising:
 - registering the first computer-related source with an action management module that receives action information about actions associated with multiple computer-related sources.
3. The method of claim 1 further comprising:
 - registering the second computer-related source with an action management module that receives action information about actions associated with multiple computer-related sources.
4. The method of claim 1 further comprising:
 - detecting selection of the recorded action of the first computer-related source from a plurality of recorded actions of the first computer-related source and the second computer-related source.

1 5. The method of claim 1 further comprising:
2 displaying recorded actions of the first computer-related source and the
3 second computer-related source in accordance with causal relationships among the
4 recorded actions.

5 6. The method of claim 1 further comprising:
6 displaying recorded actions of the first computer-related source and the
7 second computer-related source in accordance with chronological relationships
8 among the recorded actions.

9 7. The method of claim 1 wherein the executing operation comprises:
10 instructing a source-specific action management facility of the first
11 computer-related source to undo the recorded action of the first computer-related
12 source.

13 8. The method of claim 1 wherein the executing operation comprises:
14 instructing a source-specific action management facility of the first
15 computer-related source to redo the recorded action of the first computer-related
16 source.

17 9. The method of claim 1 wherein the executing operation comprises:
18 instructing a source-specific action management facility of the first
19 computer-related source to replace the recorded action of the first computer-
20 related source with another action.
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1 10. The method of claim 1 wherein the executing operation comprises:
2 instructing a source-specific action management facility of the first
3 computer-related source to replace the recorded action of the first computer-
4 related source with another action of a different action type.

5 11. The method of claim 1 wherein the executing operation comprises:
6 instructing a source-specific action management facility of the first
7 computer-related source to replace the recorded action of the first computer-
8 related source with another action of the same action type having different action
9 parameters.

10 12. The method of claim 1 wherein the executing operation comprises:
11 instructing a source-specific action management facility of the first
12 computer-related source to replace the recorded action of the first computer-
13 related source with multiple actions.

14 13. The method of claim 1 wherein the second computer-related source is
15 an application.

16 14. The method of claim 1 wherein the second computer-related source is
17 an inactive application and further comprising:
18 executing the inactive application responsive to execution of the action
19 management operation.
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1 15. The method of claim 1 wherein the second computer-related source is a
2 document object.

3 16. The method of claim 1 wherein the second computer-related source is a
4 document object.

5 17. The method of claim 1 wherein the second computer-related source is a
6 computer process.
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1 18. A computer program product encoding a computer program for
2 executing on a computer system a computer process, the computer process
3 comprising:

4 recording action information pertaining to an action of a first computer-
5 related source and an associated relationship with a recorded action of a second
6 computer-related source;

7 executing an action management operation on the action of the first
8 computer-related source and the recorded action of the second computer-related
9 source.

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11 19. The computer program product of claim 18 wherein the computer
12 process further comprises:

13 registering the first computer-related source with an action management
14 module that receives action information about actions associated with multiple
15 computer-related sources.

16 20. The computer program product of claim 18 wherein the computer
17 process further comprises:

18 registering the second computer-related source with an action management
19 module that receives action information about actions associated with multiple
20 computer-related sources.

1 21. The computer program product of claim 18 wherein the computer
2 process further comprises:

3 detecting selection of the recorded action of the first computer-related
4 source from a plurality of recorded actions of the first computer-related source and
5 the second computer-related source.

6 22. The computer program product of claim 18 wherein the computer
7 process further comprises:

8 displaying recorded actions of the first computer-related source and the
9 second computer-related source in accordance with causal relationships among the
10 recorded actions.

11 23. The computer program product of claim 18 wherein the computer
12 process further comprises:

13 displaying recorded actions of the first computer-related source and the
14 second computer-related source in accordance with chronological relationships
15 among the recorded actions.

16 24. The computer program product of claim 18 wherein the executing
17 operation comprises:

18 instructing a source-specific action management facility of the first
19 computer-related source to undo the recorded action of the first computer-related
20 source.

1 25. The computer program product of claim 18 wherein the executing
2 operation comprises:

3 instructing a source-specific action management facility of the first
4 computer-related source to redo the recorded action of the first computer-related
5 source.

6 26. The computer program product of claim 18 wherein the executing
7 operation comprises:

8 instructing a source-specific action management facility of the first
9 computer-related source to replace the recorded action of the first computer-
10 related source with another action.

11 27. The computer program product of claim 18 wherein the executing
12 operation comprises:

13 instructing a source-specific action management facility of the first
14 computer-related source to replace the recorded action of the first computer-
15 related source with another action of a different action type.

16 28. The computer program product of claim 18 wherein the executing
17 operation comprises:

18 instructing a source-specific action management facility of the first
19 computer-related source to replace the recorded action of the first computer-
20 related source with another action of the same action type having different action
21 parameters.
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1 29. The computer program product of claim 18 wherein the executing
2 operation comprises:

3 instructing a source-specific action management facility of the first
4 computer-related source to replace the recorded action of the first computer-
5 related source with multiple actions.

6 30. The computer program product of claim 18 wherein the second
7 computer-related source is an application.

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9 31. The computer program product of claim 18 wherein the second
10 computer-related source is an inactive application and the computer process
11 further comprises:

12 executing the inactive application responsive to execution of the action
13 management operation.

14 32. The computer program product of claim 18 wherein the second
15 computer-related source is a document.

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17 33. The computer program product of claim 18 wherein the second
18 computer-related source is an inactive document and the computer process further
19 comprises:

20 executing an application on the inactive document responsive to execution
21 of the action management operation.

22 34. The computer program product of claim 18 wherein the second
23 computer-related source is a computer process.

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35. A system comprising:

an action log recording action information pertaining to an action of a first computer-related source and an associated relationship with a recorded action of a second computer-related source; and

an action management module executing an action management operation on the action of the first computer-related source and the recorded action of the second computer-related source.

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36. A method comprising:
recording action information for one or more logical actions of a first
computer-related source and an associated relationship with a recorded logical
action of a second computer-related source.

1 37. A computer program product encoding a computer program for
2 executing on a computer system a computer process, the computer process
3 comprising:

4 recording action information for one or more logical actions of a first
5 computer-related source and an associated relationship with a recorded logical
6 action of a second computer-related source.
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38. A system comprising:
an action log recording action information for one or more logical actions
of a first computer-related source and an associated relationship with a recorded
logical action of a second computer-related source.

1 39. A method comprising:
2 registering a first computer-related source with an action management
3 module;
4 registering a second computer-related source with the action management
5 module; and
6 recording action information relating to an action of the first computer-
7 related source and an associated relationship with a recorded action of a second
8 source.
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1 40. A computer program product encoding a computer program for
2 executing on a computer system a computer process, the computer process
3 comprising:
4 registering a first computer-related source with an action management
5 module;
6 registering a second computer-related source with the action management
7 module; and
8 recording action information relating to an action of the first computer-
9 related source and an associated relationship with a recorded action of a second
10 source.

1 41. A system comprising:

2 an action management module registering a first computer-related source
3 with an action management module and registering a second computer-related
4 source with the action management module; and

5 an action log recording action information relating to an action of the first
6 computer-related source and an associated relationship with a recorded action of a
7 second source.
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1 42. A method in a computer system for displaying on a display device
2 logical actions of a first computer-related source and a second computer-related
3 source, the method comprising:
4 receiving a reference to an action of a first computer-related source and an
5 associated relationship with an action of a second computer-related source;
6 displaying a representation of the action of a first computer-related source
7 and a representation of the action of a second computer-related source; and
8 displaying a representation of a relationship between the action of a first
9 computer-related source and the action of a first computer-related source.
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1 43. One or more computer-readable media storing a data structure
2 comprising:

3 a first data field storing an action identifier for a primary action;
4 a second data field storing a source identifier for a first computer-related
5 source associated with the action identifier;
6 a third data field storing a related action identifier for a related action; and
7 a fourth data field storing a source identifier for a second computer-related
8 source associated with the related action identifier.

9 44. The data structure of claim 43 further comprising:
10 a fifth field storing a relationship descriptor specifying the relationship
11 between the primary action and the related action.
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13 45. The data structure of claim 43 further comprising:
14 a fifth field storing a container action identifier identifying a container
15 action containing the primary action within the action hierarchy.
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17 46. The data structure of claim 43 further comprising:
18 a fifth field storing a component action identifier identifying a component
19 action contained by the primary action within the action hierarchy.

20 47. The data structure of claim 43 wherein the data structure is recorded in
21 an action log and further comprising:

22 a fifth field storing an inactive flag indicating that the primary action has
23 been made inactive but the data structure remains persistent the action log.
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48. The data structure of claim 43 further comprising:
a fifth field storing an action descriptor describing the primary action.